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SPOUT FOR CONTAINER.

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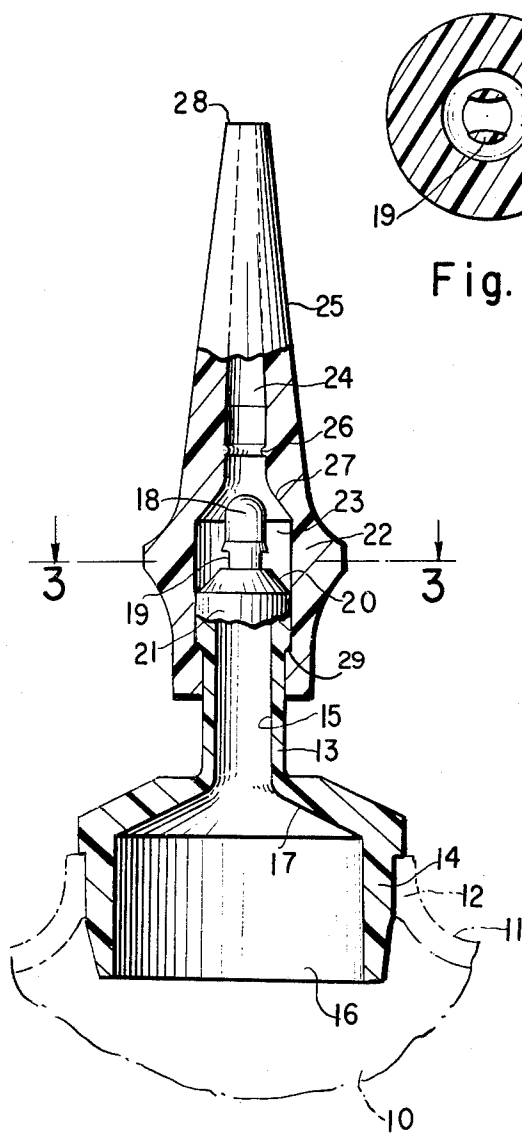


Fig. 1

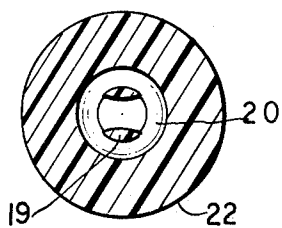


Fig. 3

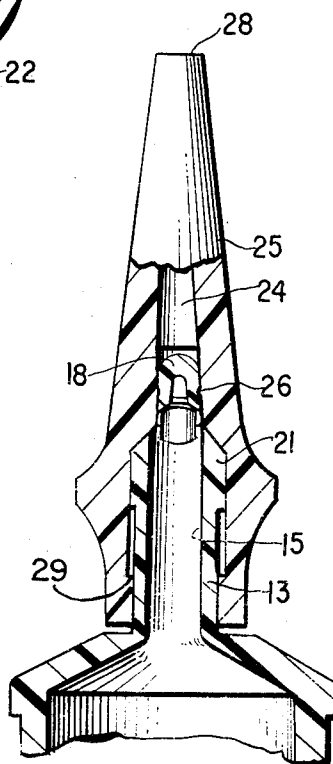


Fig. 2

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SPOUT FOR CONTAINER

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The invention relates to spouts and necks for containers in which the spouts are slidable on the necks and valve controlled to seal the contents of the containers against discharge when the spout is in one position and discharge of said contents is permitted when said spout is at another position, the volume of discharge being determined by the longitudinal position of the spout with respect to the neck upon which it is slidably mounted.

The present invention is a modification of that shown and claimed in my Patent No. 2,834,520, dated May 13, 1958, and is directed principally to the construction and relationship of the stem and spout as set forth below.

The object of my invention is to provide a closure of the character described whereby the material of the spout and the cooperation of the respective elements of spout and stem provide an effective seal, without additional means, against leakage, or against discharge, other than as desired.

Further objects and advantages of the invention will become apparent from the following specification, and inspection of the drawings.

Broadly, my invention comprises a stem attached to a container by its mounting and having a longitudinal passage therethrough which provides access to the container interior and its contents. Said stem terminates in an enlarged section and an end plug, the latter surmounting at least one aperture in communication with said longitudinal passage and an interior chamber of a surrounding slidable spout. The latter is slidably mounted on said stem and embraces it and said enlarged section. The chamber of the slidable spout is reduced in circumference toward the spout discharge end, said spout being thereby provided with an interior annular restriction in the bore adapted to engage the plug end of the stem to assist in sealing the container against discharge of its contents when the spout is in its "lower," or "closed," location. Further sealing is effected by cooperating shoulders of the stem and spout, it being understood that the motion of the spout to its "outer" or "open" position breaks the seal and links the bore of the stem with the longitudinal bore of the spout through the spout chamber and stem apertures whereby the container contents may be discharged through the spout.

A practical embodiment of my invention is shown in the accompanying drawing in which:

FIG. 1 represents, in side elevation, partly broken away, and partly in section, a spout constructed according to my invention in its "outer," or "open," position for discharge of the container contents therethrough.

FIG. 2 represents the embodiment shown in FIG. 1, partly in section and partly broken away, the parts being in the "lower," or "closed," position to seal the container against discharge of its contents, and

FIG. 3 represents a transverse section taken on the line 3-3 of FIG. 1 and looking in the direction of the arrows.

The invention is illustrated as applied to a container 10, arranged with a neck 13 comprising a shoulder 11, terminating in a vertical wall 12. Said neck, or stem, 13 is provided with a depending section 14 adapted to be forced into the opening surrounded by wall 12 to form a liquid tight fit therewith as shown in FIG. 1. The neck, or stem, 13 has an enlarged bore section 16 narrowing at 17 into a bore 15 which extends longitudinally through

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said stem, said stem 13 terminating in a plug 18 which surmounts apertures denoted generally by 19. Below said plug end 18, a tapered section, or shoulder, 20 terminates in a slightly enlarged portion 21 of the stem 13, said enlarged portion being slidably engaged by the interior wall of a spout section 22, surrounding an enlargement 23 of a longitudinal tapered bore 24 which extends through the spout 25. The latter is provided with an interior annular restricted section 26 adapted to releasably engage plug end 18 of stem 13, as shown in FIG. 2, to aid in sealing the spout bore 24 against discharge of the contents of container 10. Said sealing action is further assisted by the contact of tapered section 20 with the interior slanting wall 27 below the restricted section 26 of spout 25. It will be understood that the above described sealing action takes place when the parts are in the positions shown in FIG. 2.

The illustrated structure includes the stem 13 and its section 14 formed of a material, such as butyrate, and the container 10 and spout 25 are normally formed of less rigid material, the spout being made of polyethylene. The several parts are approximately of the relative dimensions shown in the drawings whereby liquid tight fits are obtained at the container wall 12; the section 20 and wall 27; and at the plug 18 and restricted section 26 of spout 25.

The operation to discharge container contents through the bore in spout 25 includes raising the spout from the sealing position described and shown in FIG. 2 to that shown in FIG. 1 by grasping the spout (as at section 22), holding the container 10, or neck 13, and sliding the spout longitudinally with respect to the said neck 13, section 21 and plug 18. Such action breaks the seal at sections 20 and wall 27; and at plug 18 and section 26; thereby providing access for the container contents from section 16, through bore 15, apertures 19, enlargement 23 and bore 24 to the discharge end 28 of spout 25. To effect a sealing off of the contents the spout 25 is slid in the reverse direction to the position shown in FIG. 2 and above described.

For purposes of illustration, the constriction at plug 18 and the section 26 has been exaggerated to a degree sufficient to clearly show the cooperation of these elements.

The longitudinal upward movement of the spout 25 with respect to the stem section 21 is limited by the inverted shoulder 29 on the lower end of the spout as appears in FIG. 1, as said shoulder engages the bottom section 21. the resiliency of the spout enables shoulder 29 of same to be forced over the stem section 21 for purposes of assembly.

Since it is evident that various changes may be made in the form, construction and arrangement of the several parts without departing from the spirit and scope of my invention, I do not intend to be limited to the particular embodiment herein shown and described except as set forth in the appended claims.

What I claim is:

1. A spout and neck structure for a container comprising a mounting member for liquid tight engagement with a container, a neck extending from said member, an enlarged portion of said neck, an upwardly tapered section of said enlarged portion, a plug mounted on the top of said tapered section, a longitudinal bore through said mounting member and neck, at least one aperture in said plug at the top of said tapered section and angled to said bore and in communication therewith, a spout slidably mounted on said neck and enlarged portion, a longitudinal bore through said spout extending below and adapted to encompass said enlarged portion, neck and plug and which is in communication with at least one of said apertures, a restricted interior portion of said spout

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intermediate its ends adapted to frictionally engage said plug beyond its end in sealing engagement, whereby longitudinal movement of the spout with respect to the neck in one direction seals off one bore from the other, and substantial longitudinal movement of the spout in the opposite direction places said bores in communication for discharge of container contents.

2. A spout and neck structure for a container as claimed in claim 1 wherein the enlarged portion of said neck has a tapered top section for sealing engagement with the spout bore when said plug is engaged substantially below its top by said restricted interior portion of the spout.

3. A spout and neck structure for a container as claimed in claim 1 wherein the restricted interior portion

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of the spout is of a size and resiliency different from the size and resiliency of said plug for releasably receiving same in sealing engagement.

4. A spout and neck structure for a container as claimed in claim 1 wherein means for limiting the longitudinal movement of the spout with respect to the neck comprises an intumed shoulder on the spout for cooperation with the bottom of the enlarged portion of the neck.

References Cited in the file of this patent**UNITED STATES PATENTS**

1,006,923	Du Pont et al. _____	Oct. 24, 1911
3,032,240	Dunklee _____	May 1, 1962